

CLAIMS AMENDMENTS:

Please cancel claims 15-22 and 28-59, without prejudice.

Please amend the claims as follows:

Claims 1-14 (Canceled)

Claim 15 (Canceled)

Claim 16 (Canceled)

Claim 17 (Canceled)

Claim 18 (Canceled)

Claim 19 (Canceled)

Claim 20 (Canceled)

Claim 21 (Canceled)

Claim 22 (Canceled)

Claims 23-27 (Canceled)

Claim 28 (Canceled)

Claim 29 (Canceled)

Claim 30 (Canceled)

Claim 31 (Canceled)

Claim 32 (Canceled)

Claim 33 (Canceled)

Claim 34 (Canceled)

Claim 35 (Canceled)

Claim 36 (Canceled)

Claim 37 (Canceled)

Claim 38 (Canceled)

Claim 39 (Canceled)

Claim 40 (Canceled)

Claim 41 (Canceled)

Claim 42 (Canceled)

Claim 43 (Canceled)

Claim 45 (Canceled)

Claim 46 (Canceled)

Claim 47 (Canceled)

Claim 48 (Canceled)

Claim 49 (Canceled)

Claim 50 (Canceled)

Claim 51 (Canceled)

Claim 52 (Canceled)

Claim 53 (Canceled)

Claim 54 (Canceled)

Claim 55 (Canceled)

Claim 56 (Canceled)

Claim 57 (Canceled)

Claim 58 (Canceled)

Claim 59 (Canceled)

Claim 60 (Canceled)

61. (Currently Amended) An isolated nucleic acid molecule that encodes an OB polypeptide capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~thereto~~, said nucleic acid optionally in a pharmaceutical carrier, wherein said OB polypeptide encoded by said isolated nucleic acid comprises the amino acid sequence set out in:

- a) SEQ ID NO:2;
- b) amino acids 22-167 of SEQ ID NO:2;
- c) SEQ ID NO:4 or
- d) amino acids 22-167 of SEQ ID NO:4.

62. (Currently amended) An isolated nucleic acid molecule that encodes an OB polypeptide capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~thereto~~, said nucleic acid optionally in a pharmaceutical carrier, wherein said OB polypeptide encoded by said isolated nucleic acid comprises the amino acid sequence

set out in

- a) SEQ ID NO:5;
- b) amino acids 22-166 of SEQ ID NO:5;
- c) SEQ ID NO:6 or
- d) amino acids 22-166 of SEQ ID NO:6.

63. (Currently amended) An isolated nucleic acid molecule that encodes an OB polypeptide capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~thereto~~, said nucleic acid optionally in a pharmaceutical carrier, wherein said OB polypeptide encoded by said isolated nucleic acid has 83 percent or greater amino acid sequence identity to the OB polypeptide amino acid sequence set out in SEQ ID NO:2, 4, 5 or 6.

64. (Currently amended) An isolated nucleic acid molecule that encodes an OB polypeptide, capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~thereto~~, said nucleic acid optionally in a pharmaceutically acceptable carrier, wherein said OB polypeptide encoded by said isolated nucleic acid is an OB polypeptide variant comprising amino acids 22-167 of SEQ ID NO:4 in which one or more amino acids selected from the group consisting of amino acids 53, 56, 71, 85, 89, 92, 95, 98, 110, 118, 121, 122, 126, 127, 128, 129, 132, 139, 157, 156, 163 and 166, according to the numbering of SEQ ID NO: 4, is substituted with a conserved amino acid.

65. (Currently amended) An isolated nucleic acid molecule that encodes an isolated nucleic acid molecule that encodes an OB polypeptide capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~thereto~~, said nucleic acid optionally in a pharmaceutically acceptable carrier, wherein said OB polypeptide encoded by said isolated nucleic acid is an OB polypeptide variant comprising amino acids 22-167 of SEQ ID NO:4 in which one or more of amino acids selected from the group consisting of amino acids 53, 56, 71, 85, 89, 92, 95, 98, 110, 121, 122, 127, 128, 129, 139, 157, 159 and 163, according to the numbering of SEQ ID NO: 4, is substituted with the particular amino acid present at the corresponding position in SEQ ID NO: 2.

66. (Currently amended) An isolated nucleic acid molecule that encodes an OB polypeptide, capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~there~~, said nucleic acid optionally in a pharmaceutically acceptable carrier, wherein said OB polypeptide encoded by said isolated nucleic acid is an OB polypeptide variant comprising amino acids 22-167 of SEQ ID NO:6 in which one or more of amino acids selected from the group consisting of amino acids 52, 55, 70, 84, 88, 91, 94, 97, 109, 117, 120, 121, 125, 126, 127, 128, 131, 138, 156, 158, 162 and 165, according to the numbering of SEQ ID NO: 6, is substituted with a conserved amino acid.

67. (Currently amended) An isolated nucleic acid molecule that encodes an OB polypeptide, capable of modulating body weight and also encodes ~~having~~ one or more polymers attached to said OB polypeptide ~~there~~, said nucleic acid optionally in a pharmaceutically acceptable carrier, wherein said OB polypeptide encoded by said isolated nucleic acid is an OB polypeptide variant comprising amino acid 22-167 of SEQ ID NO:6 in which one or more of amino acids selected from the group consisting of amino acids selected from the group consisting of amino acids 52, 55, 70, 84, 88, 91, 94, 97, 109, 120, 121, 125, 126, 127, 128, 138, 156, 158 and 162, according to the numbering of SEQ ID NO: 6, is substituted with the particular amino acid at the corresponding position in SEQ ID NO: 5.

Claim 68 (Canceled)

69. (Currently amended) The nucleic acid of any one of claims 61-67 ~~59 to 67~~, wherein at least one of said polymers is a polyamino acid and is N-terminally attached to said OB polypeptide.

70. (Currently amended) The nucleic acid of any one of claims 61-67 ~~59 to 67~~, wherein at least one of said polymers is a polyamino acid and is C-terminally attached to said OB polypeptide.

71. (Currently amended) The nucleic acid of any one of claims 61-67 ~~59 to 67~~, wherein said nucleic acid is selected from the group consisting of DNA or RNA.

72. (Currently amended) The nucleic acid of any one of claims 61-67 ~~59 to 67~~, wherein said nucleic acid is detectably labeled.

73. (Currently amended) A cloning vector comprising a nucleic acid of any one of claims 61-67 ~~59 to 67~~.

74. (Currently amended) An expression construct comprising a nucleic acid molecule of any one of claims 61-67 ~~59 to 67~~ operatively associated with an expression control sequence.

75. (Previously presented) The expression vector of claim 74, wherein said expression control sequence is selected from the group consisting of cytomegalovirus hCMV immediate early gene, the early or late promoters of SV40 or adenovirus, the lac system, the trp system, the TAC system, the major operator and promoter regions of phage  $\lambda$ , the control regions of fd coat protein, the promoter for 3-phosphoglycerate kinase, the promoters of acid phosphatase, and the promoters of the yeast  $\alpha$ -mating factors.

76. (Previously presented) A unicellular host transfected with a cloning vector of claim 73.

77. (Previously presented) A host cell transformed with an expression construct of claim 74.

78. (Previously presented) The host cell of claim 77, wherein said host cell is selected from the group consisting of *E. coli*, *Pseudomonas*, *Bacillus*, *Streptomyces*, Pichia yeasts, CHO, R1.1, B-W, L-M, COS-1, COS-7, BSC1, BSC40, BMT10 and cells, plant cells, insect cells and human cells in tissue culture.

79. (Previously presented) A method for preparing an OB polypeptide comprising;  
a) culturing a host cell of claim 76 under conditions that allow the expression of said OB polypeptide; and

b) recovering the expressed OB polypeptide.

80. (Previously presented) The method of claim 79, wherein said host cell is a bacterial cell.

81. (Previously presented) The method of claim 79, wherein the host cell is a yeast cell.

82. (Previously presented) The method of claim 79, further comprising:

- c) chromatographing the polypeptide on a Ni-chelation column; and
- d) purifying the polypeptide by gel filtration.

83. (Previously presented) The method of claim 82, further comprising after step (c) and prior to step (d), chromatographing the OB polypeptide on a strong cation exchanger column.

84. (Previously presented) A method for preparing an OB polypeptide comprising:

- a) culturing a host cell of claim 77 under conditions that allow the expression of said OB polypeptide; and
- b) recovering the expressed OB polypeptide.

85. (Previously presented) The method of claim 84, wherein said host cell is a bacterial cell.

86. (Previously presented) The method of claim 84, wherein the host cell is a yeast cell.

87. (Previously presented) The method of claim 84, further comprising:

- (c) chromatographing the polypeptide on a Ni-chelation column; and
- (d) purifying the polypeptide by gel filtration.

88. (Previously presented) The method of claim 86, further comprising after step (c) and prior to step (d), chromatographing the OB polypeptide on a strong cation exchanger column.